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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/000,229

11/30/2001

Rajen Dias

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02/27/2003

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EXAMINER

PHAM, HOAI V

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/000,229

Applicant(s)

DIAS ET AL.

Examiner

Hoai V Pham

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 15-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 1-14 in Paper No. 4 is acknowledged.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosaki et al. [U.S. Pat. 6,008,537].

With respect to claim 1, Kosaki et al. (figs. 3A-3K, cols. 1-2) discloses a microelectronic device, comprising:

a microelectronic die (1) having an active surface, a back surface, and at least one side;

the at least one microelectronic die side comprising at least one trench sidewall (groove 33), at least one lip and at least one channel sidewall (groove 3); and

a metallization layer (7) disposed on the microelectronic die back surface and the at least one trench sidewall.

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With respect to claim 2, Kosaki et al. discloses that the at least one trench sidewall is substantially planar to the at least one channel sidewall (groove 3) (fig. 3K).

With respect to claim 5, Kosaki et al. discloses that the at least one lip is substantially curved to at least one of the at least one trench sidewall and at least one channel sidewall (fig. 3K).

With respect to claim 6, Kosaki et al. discloses that the metallization layer is at least one metal selected from the group consisting of gold, silver, titanium, chromium, vanadium, tungsten, and nickel (col. 4, lines 31-34).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 3, 4, 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaki et al. [U.S. Pat. 6,008,537] in view of Applicant Admitted Prior Art (figs. 13-14).

With respect to claim 7, Kosaki et al. (figs. 3A-3K, cols. 1-2) discloses a microelectronic device, comprising:

a microelectronic die (1) having an active surface, a back surface, and at least one side;

the at least one microelectronic die side comprising at least one trench sidewall (groove 33), at least one lip and at least one channel sidewall (groove 3); and a metallization layer (7) disposed on the microelectronic die back surface and the at least one trench sidewall; and

a heat dissipation device (8) attached to the microelectronic die back surface.

Kosaki et al. fails to disclose that a thermal interface material is between the heat dissipation device and the microelectronic die back surface. However, Applicant Admitted Prior Art shows that the thermal interface material (234) is between the heat dissipation device and the microelectronic die back surface (pp. 2-3). Therefore, it would have been obvious to the skilled in the art to apply the thermal interface material as taught by Applicant Admitted Prior Art into the device of Kosaki et al. in order to adhere the heat dissipation device to the microelectronic die back surface.

With respect to claim 8, Kosaki et al. discloses that the at least one trench sidewall is substantially planar to the at least one channel sidewall (groove 3) (fig. 3K).

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With respect to claim 11, Kosaki et al. discloses that the at least one lip is substantially curved to at least one of the at least one trench sidewall and at least one channel sidewall (fig. 3K).

With respect to claim 12, Kosaki et al. discloses that the metallization layer is at least one metal selected from the group consisting of gold, silver, titanium, chromium, vanadium, tungsten, and nickel (col. 4, lines 31-34).

With respect to claim 13, Applicant Admitted Prior Art discloses that the thermal interface material (234) is selected from the group consisting of lead, tin, indium, silver, 3 copper, and alloys thereof (page 2, lines 23-24).

With respect to claim 14, Applicant Admitted Prior Art discloses that the at least a portion of a fillet of the thermal interface material extend from the metallization layer on the microelectronic die to the heat dissipation device (fig. 14).

With respect to claim 3, 4, 9 and 10, Kosaki et al. does not teach exactly the shape of the lip as claimed by Applicant. However, the shape, size, dimension differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1995).

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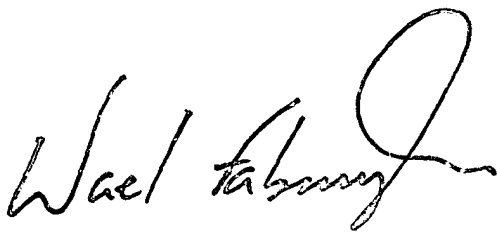
**Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai V Pham whose telephone number is 703-308-6173. The examiner can normally be reached on 6:30A.M. - 6:00P.M..

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

HP  
Hoai Pham  
February 20, 2003

  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2000